

Identifying supply-side constraints to exports

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Trade Competitiveness Diagnostic

Objectives:

- 1) Helping countries understand the position, performance, and capabilities in export markets, and the factors that determine (constrain) competitiveness in current traded sectors
 - 2) Helping countries to explore comparative advantage and the factors which determine (constrain) the processes of adjustment of economic structure
- Policy-oriented: allow for prioritization and guidelines for action
 - Flexible: Can be applied at national level or to individual sectors
 - Comparative: Combines qualitative and quantitative analysis, with focus on benchmark comparisons

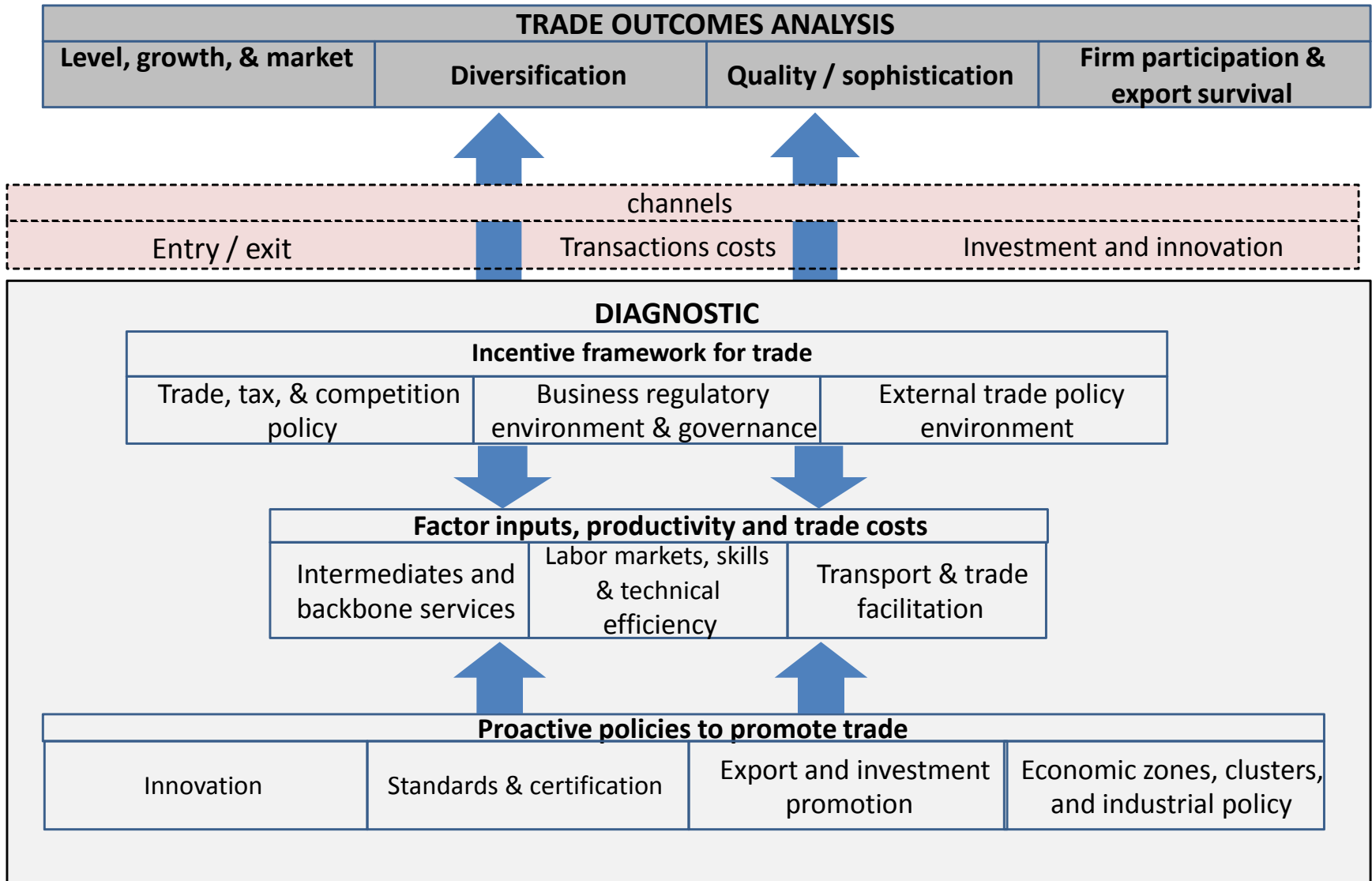


Outputs

- Two main analytical components:
 1. Trade Outcomes Analysis: assessment of past trade performance and potential future trajectory
 2. Competitiveness Diagnostics: assessment of factors which explain trade performance
- Includes standard set of quantitative metrics (benchmarked against set of peers) + structured qualitative analysis
- Toolkit with framework, approach, and other tools for conducting a diagnostic



The framework



Outline

- Trade outcomes: helps narrow down the problem areas of exports
 1. Export level, growth, and market share
 2. Diversification
 3. Quality and sophistication
 4. Firm participation and export survival

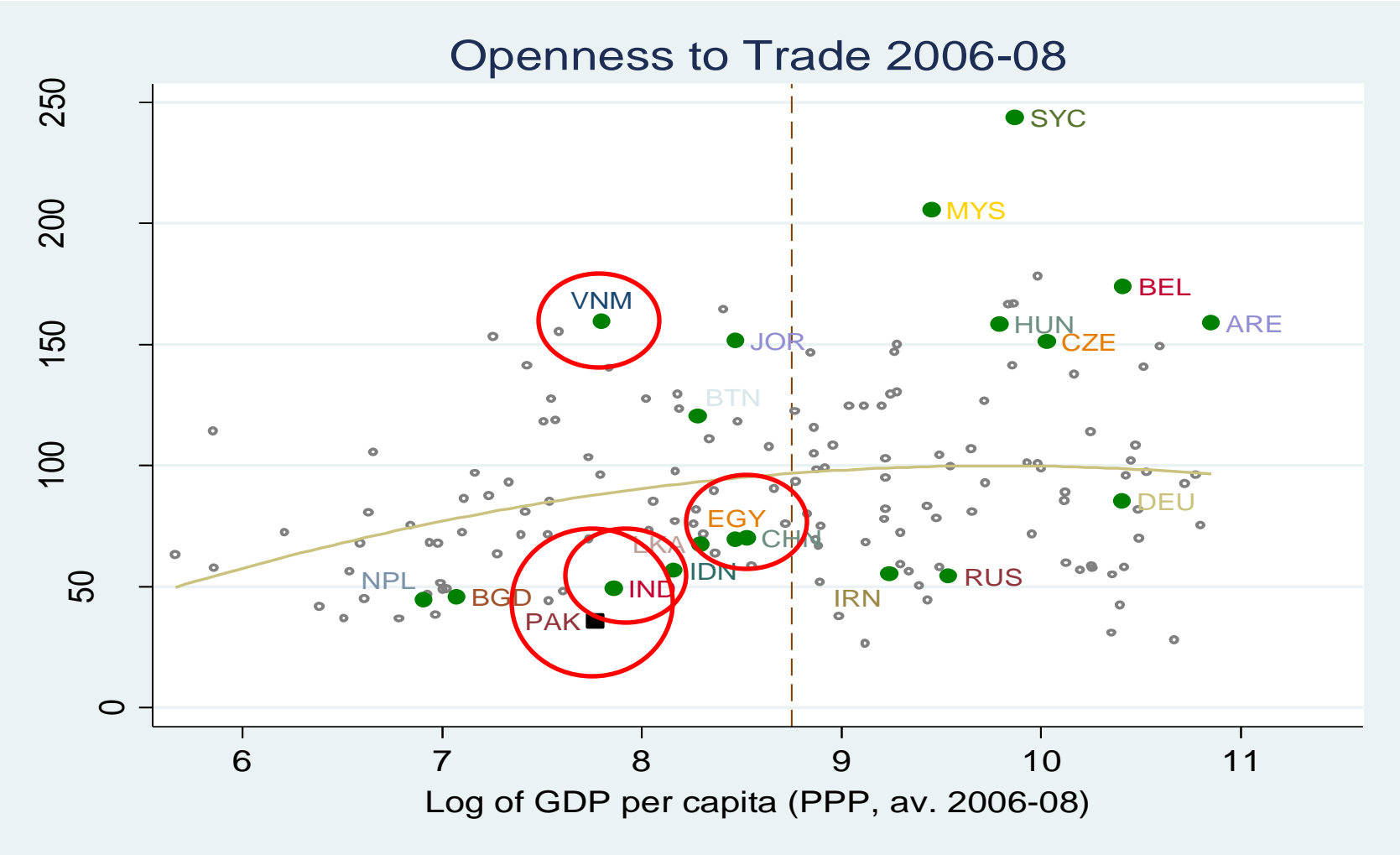


Setting the stage: export level, growth, and market share

- Gives an overall picture of trade performance: what are main exports and how well have they been performing in global markets
- Core measures:
 - Trade Openness
 - Trends in Trade Growth
 - Composition of Exports – products and markets
 - Growth Orientation
 - Market Share Trends
 - Revealed Comparative Advantage

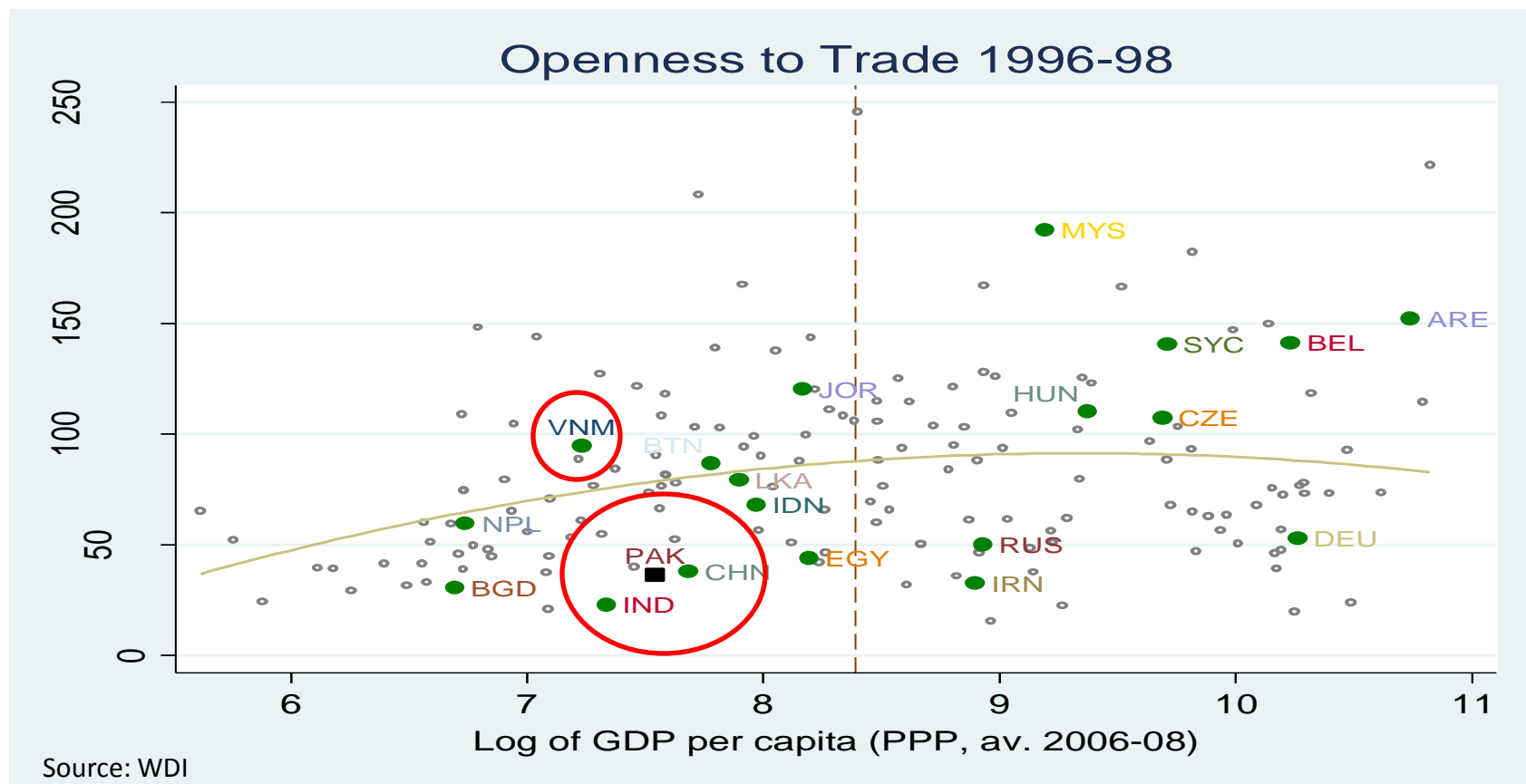


Trade “openness”



Trade “openness”

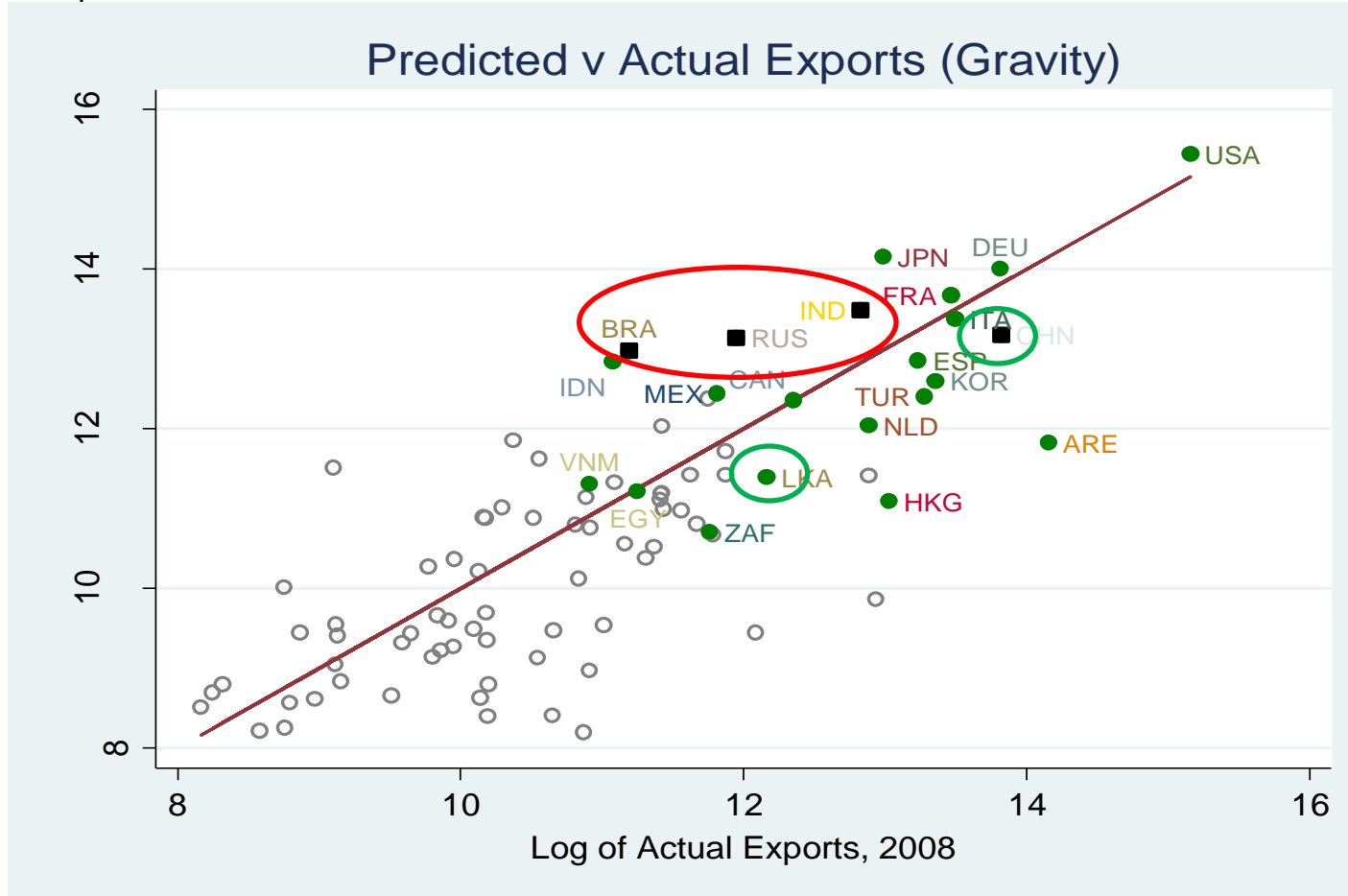
- The richer you are the more you trade... but concave relationship
- Take a look at Pakistan v. India, China, and Vietnam...



Trading partners – importance of fast-growing partners and regional agreements

- Using a standard gravity equation may tell a useful story about trading partners

Example: Pakistan



A much simplified approach is the **Trade Intensity Index**:
= share of your exports to Country X / share of global exports to Country X

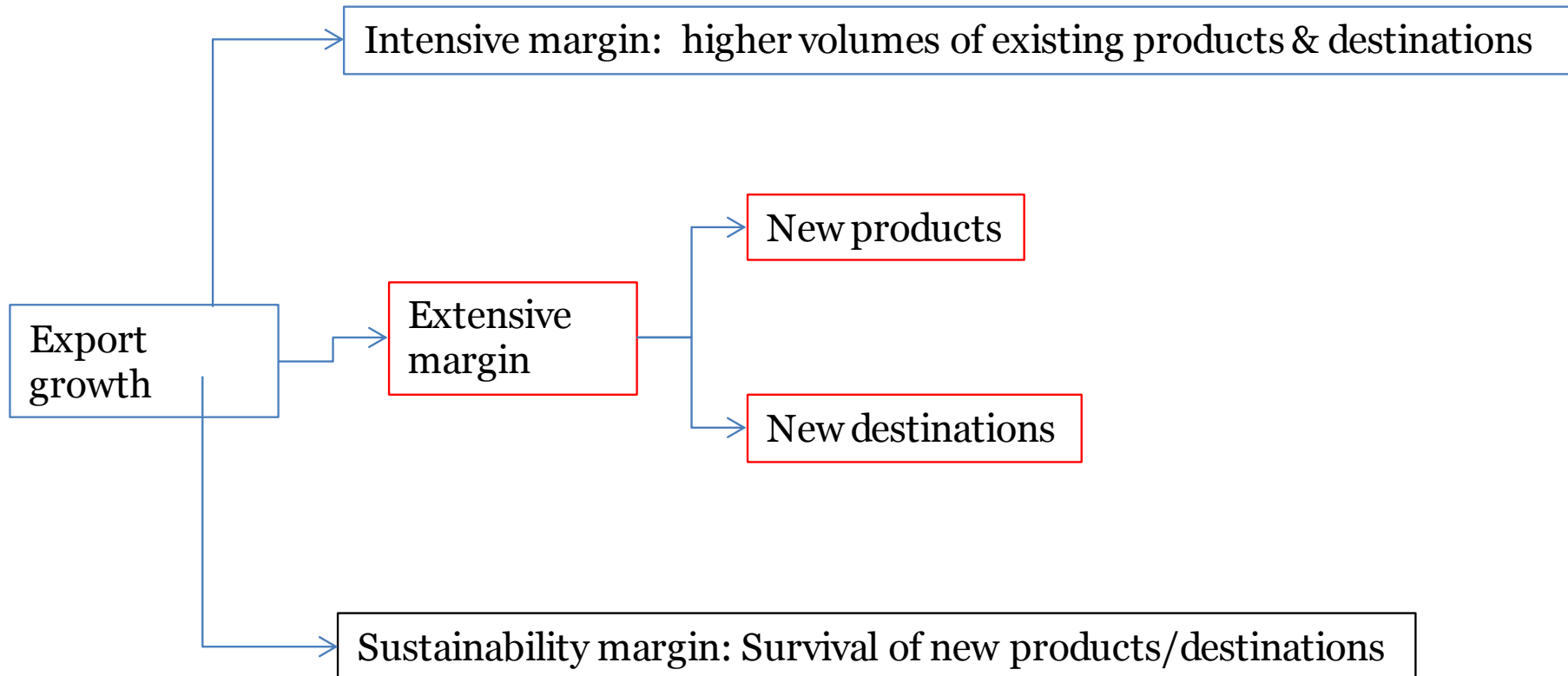


Diversification: critical in any trade strategy

- Despite the “rehabilitation” of commodities, few countries have developed quickly on the basis of exports of primary products alone – but really the main issue is about concentration rather than the nature of that concentration
- A more diverse structure of exports reduces vulnerability to demand shocks and price swings in overseas markets
- Core measures:
 - Measures of Concentration (HH, Top 5, etc.)
 - Extensive and Intensive Margins
 - Market Reach of Individual Exports



The intensive and extensive margin of trade flows

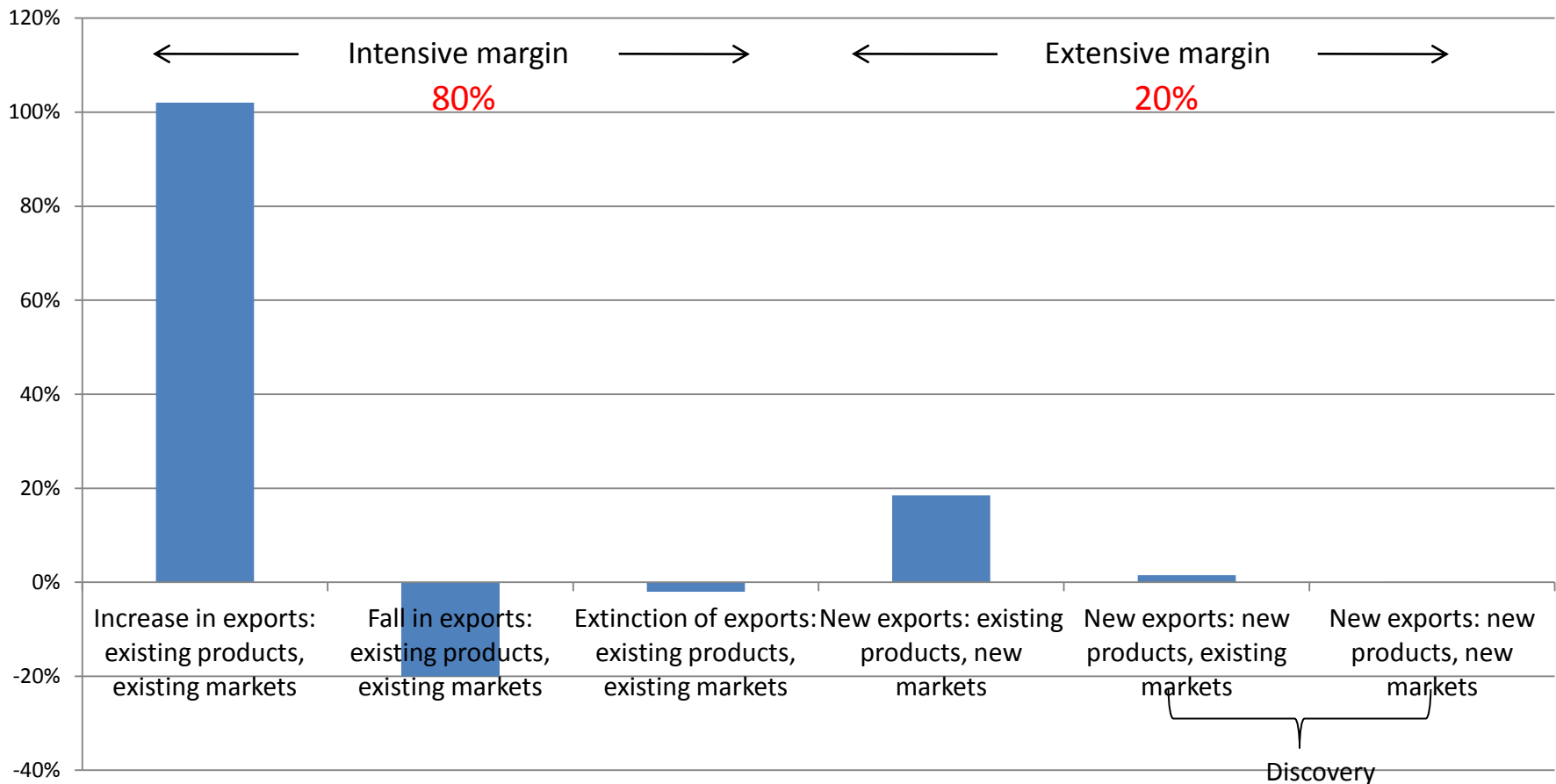


Source: Cadot et al (forthcoming)



Majority of trade growth is at the IM...

Decomposition of export growth for 99 developing countries: 1995-2004

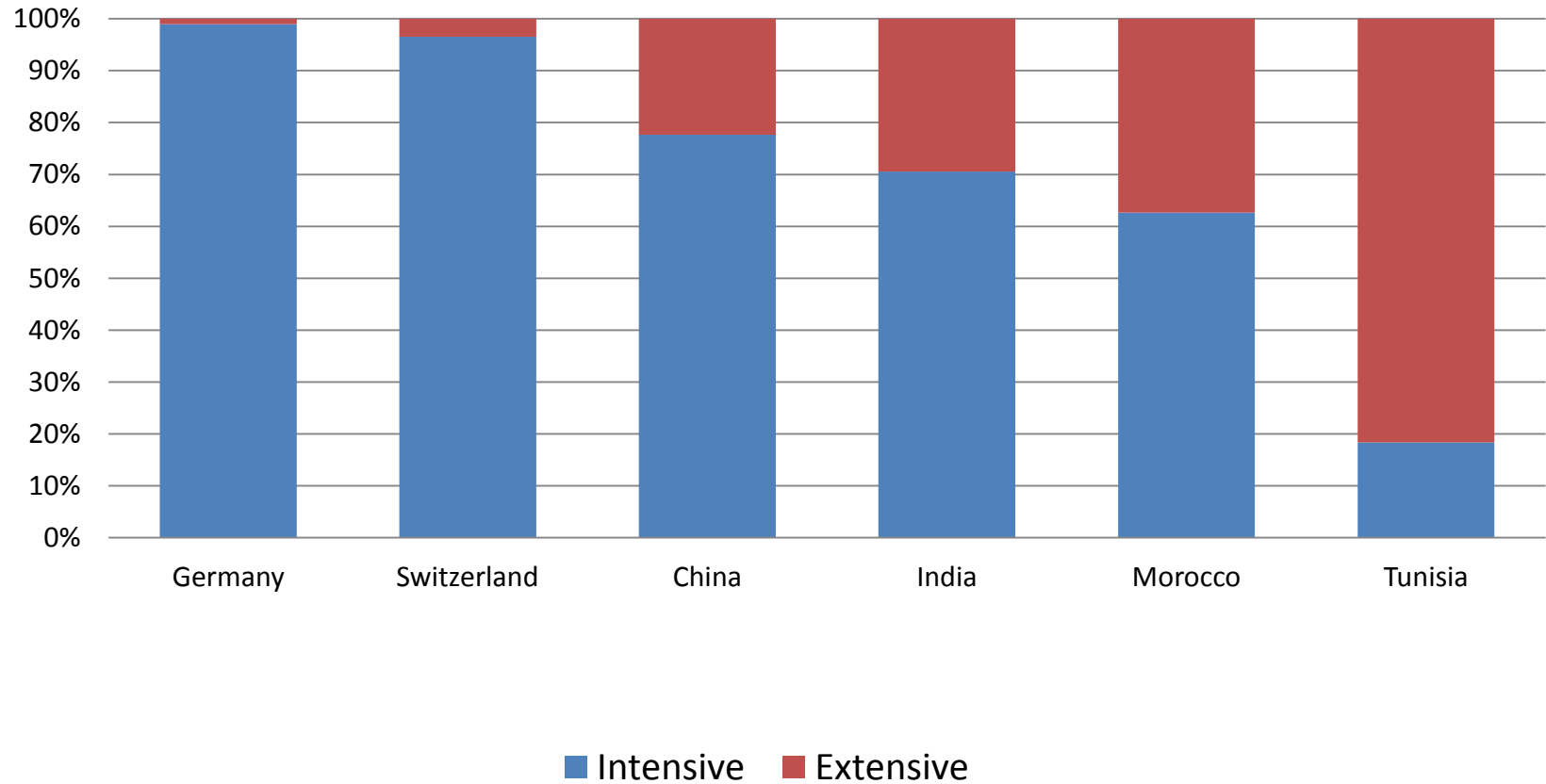


Source: Brenton and Newfarmer (2009)



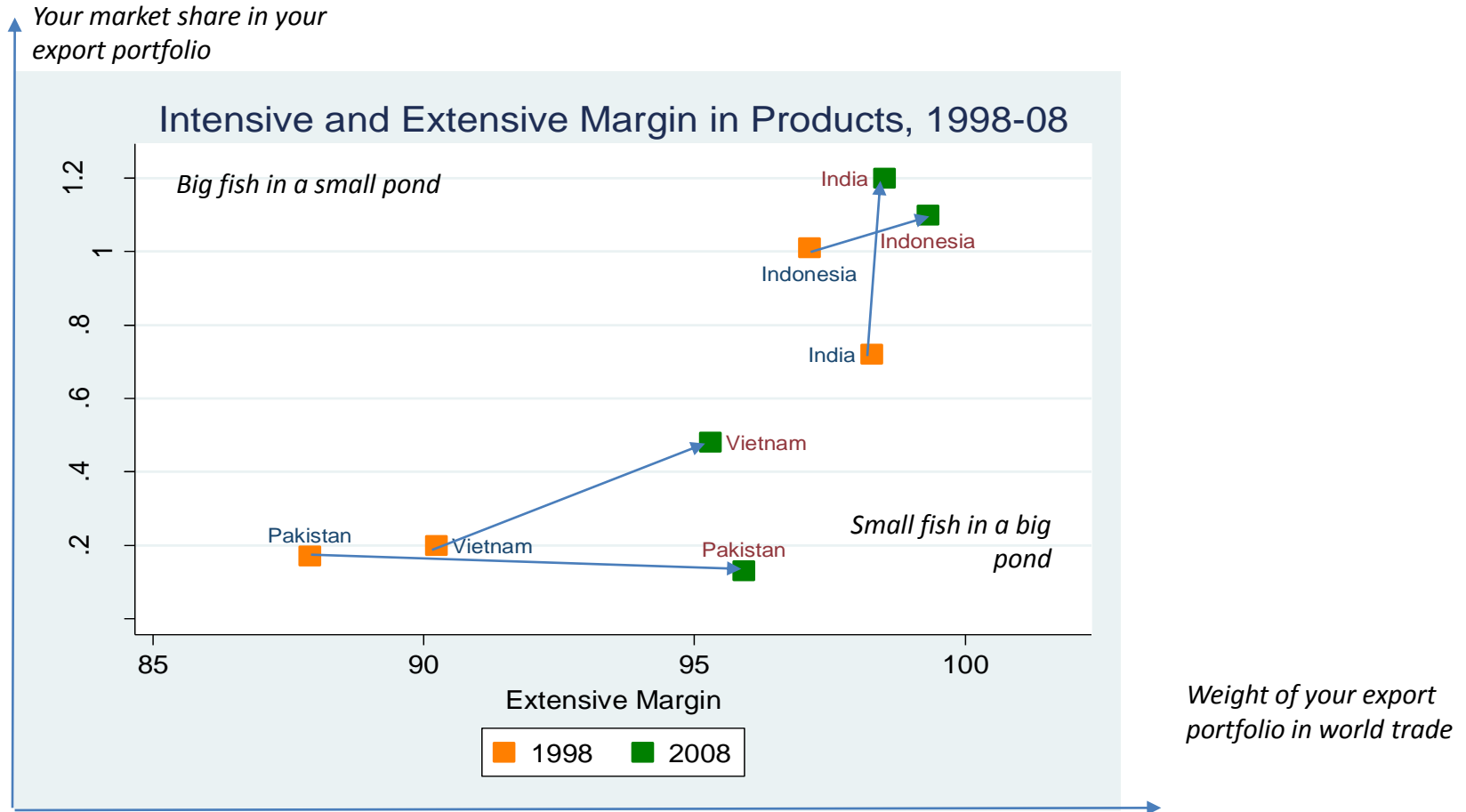
... but some countries experience most growth at XM

Share of trade growth at Intensive v Extensive margin (1998-2008)



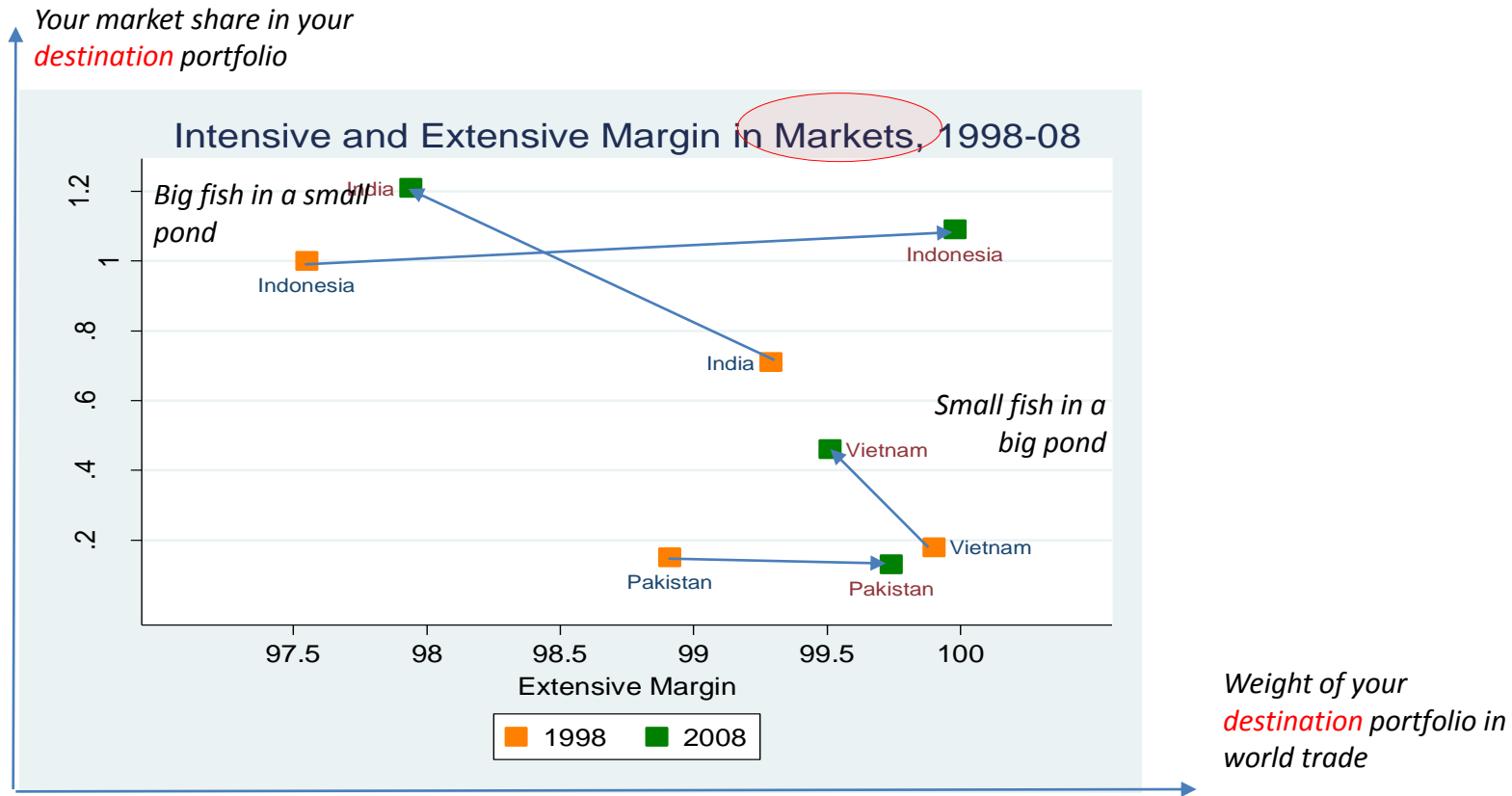
Analyzing the IM and XM

Are you big in what you export? Does what you export matter?



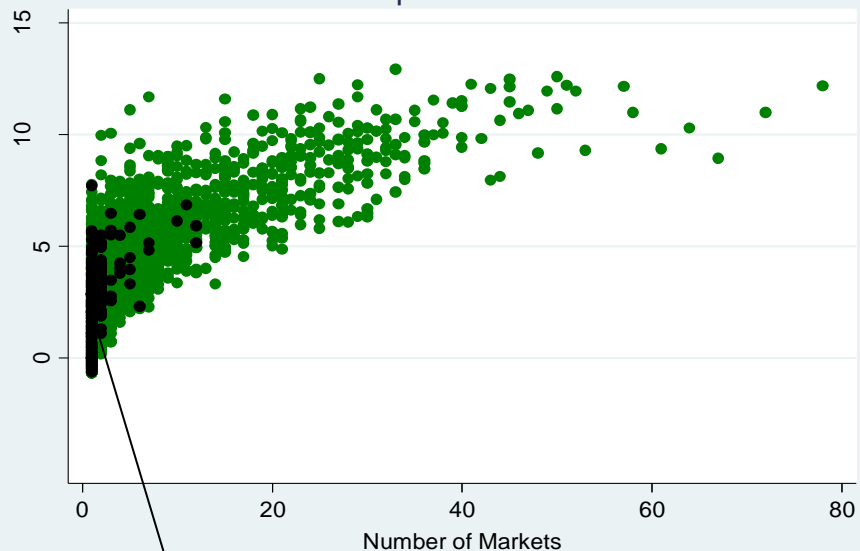
The geographical extension of Hummels-Klenow IM and XM

Are you big in the markets you serve? Do these markets matter in the global economy?



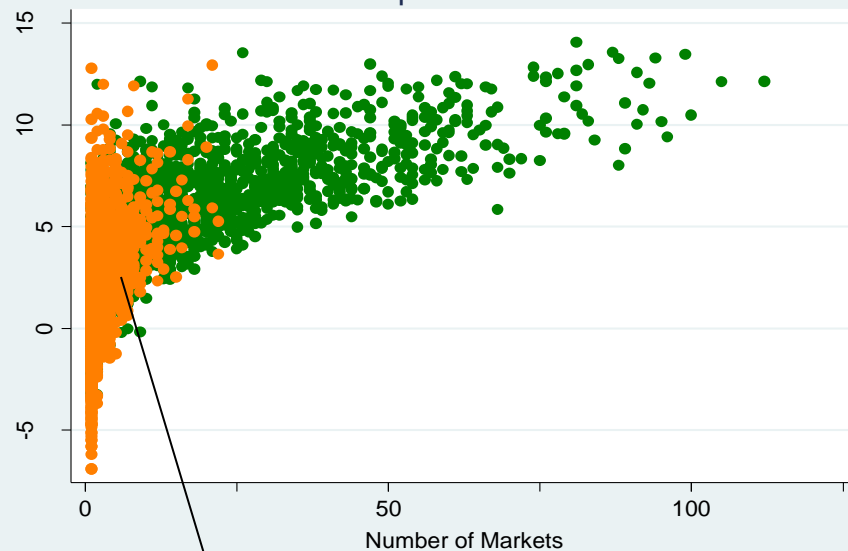
Another view of export market reach

Pakistan's Export Destinations 1998



Death

Pakistan's Export Destinations 2008



Discovery

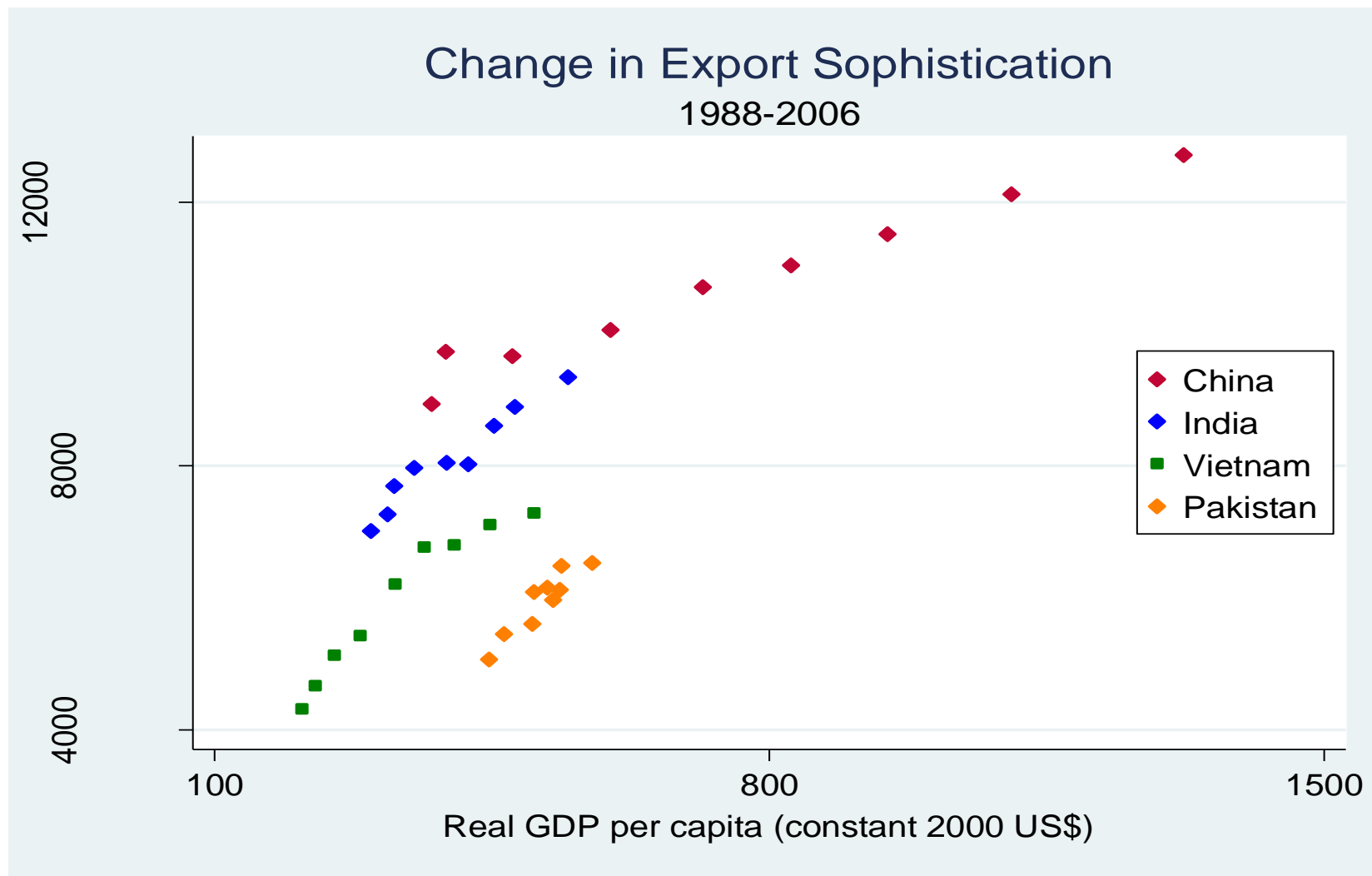


Measuring quality and sophistication

1. **Technology content** (Lall, 2000)
 - Links a product to its technological content
 - Cereals and fish are primary (PP), minerals are resource-based (RB) and manufactured products are low, medium or hi tech (LT, MT,HT)
2. **Sophistication (PRODY and EXPY)** (HHR, 2005)
 - PRODY: weighted average of incomes of countries exporting the good
 - EXPY: weighted sum of the a country's export basket as measured in PRODY
3. **Revealed factor intensity** (Cadot, Shirotori, Tumurchudur, 2009)
 - Same concept as PRODY and EXPY but classifying products based on the revealed factor intensities (capital, labor, land / natural resources) of the exporting countries
4. **Unit values**:
 - Standard approach, but problems with the trade data: standardization on units, customs attention (bias), “apples to apples comparisons”

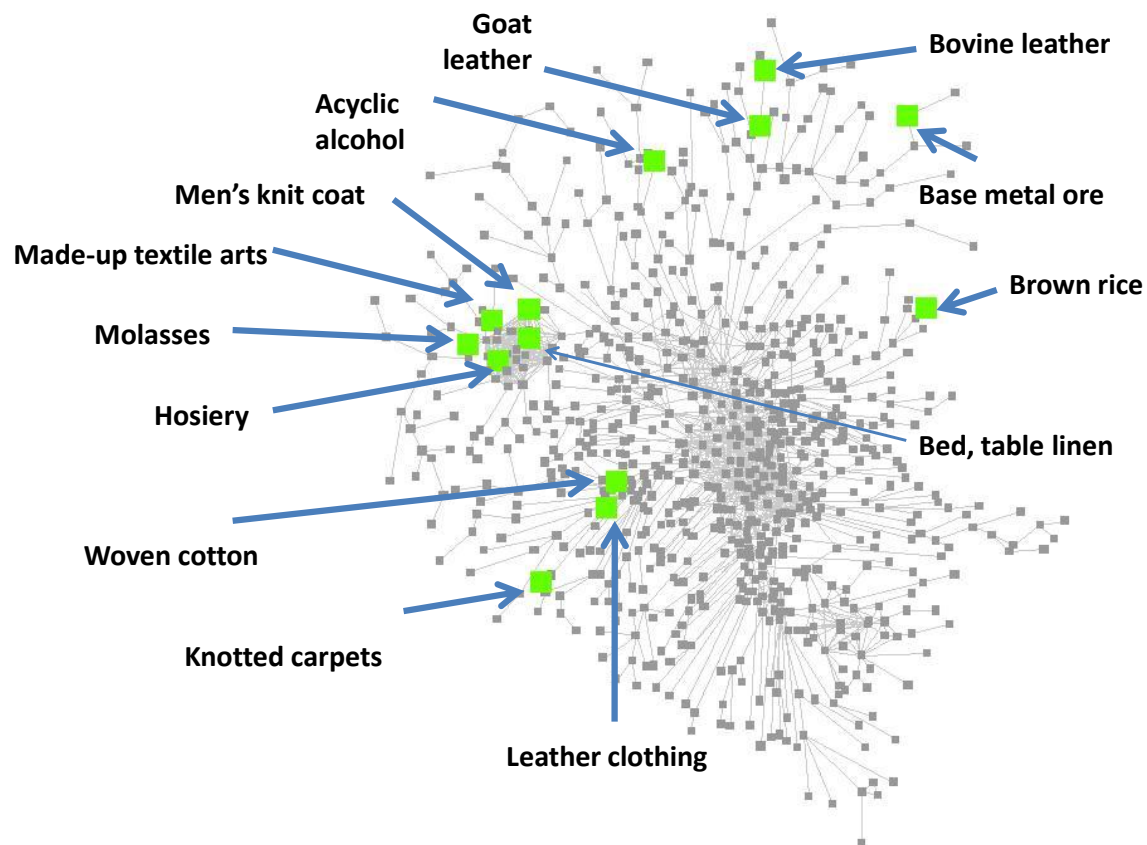


Export sophistication (EXPY)

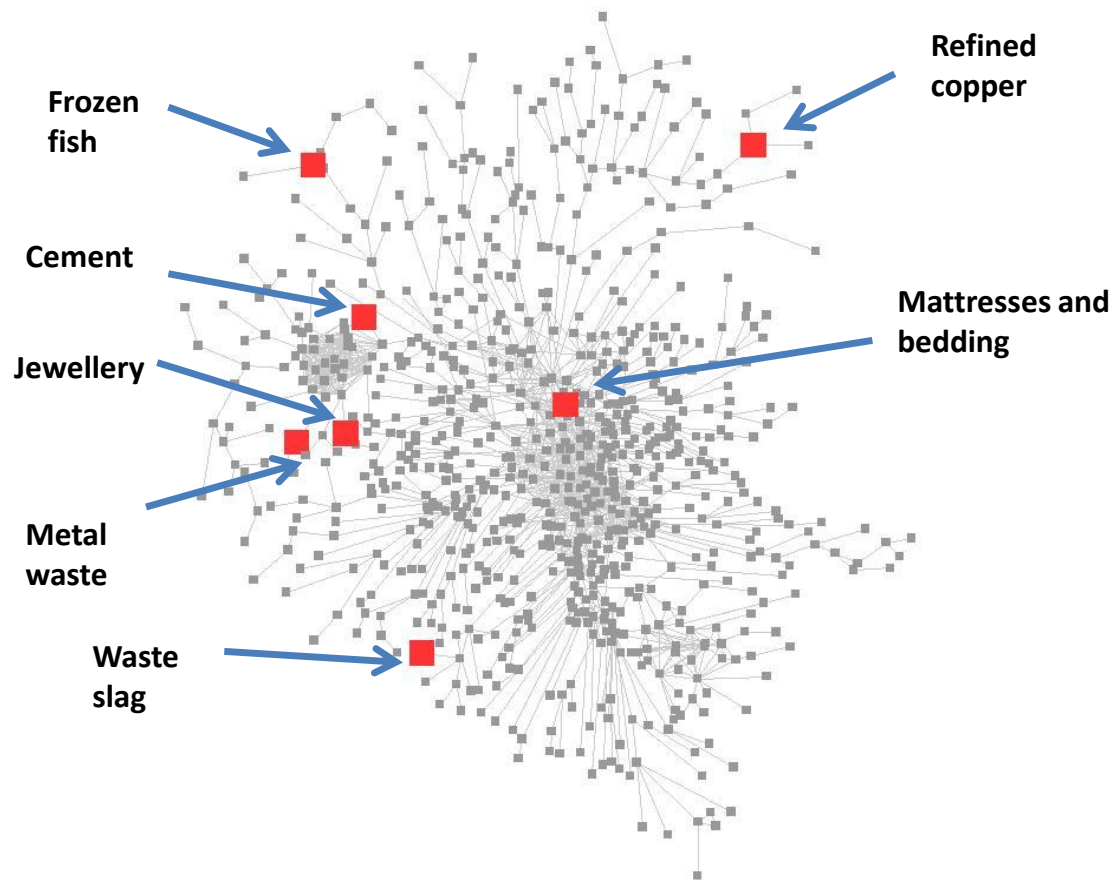


Example

Figure 4.21 (i): Pakistan's competitive products, 1993-2008

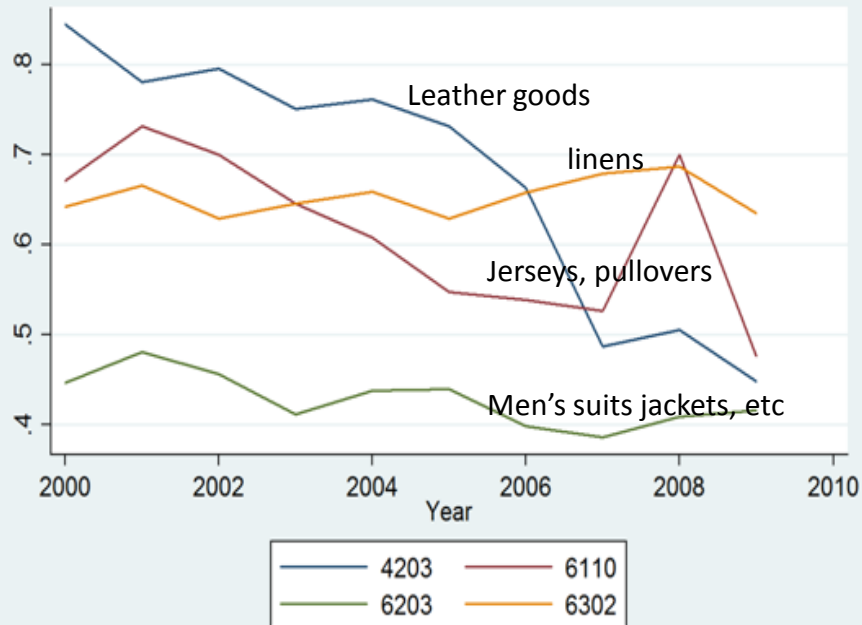


Example- emerging products

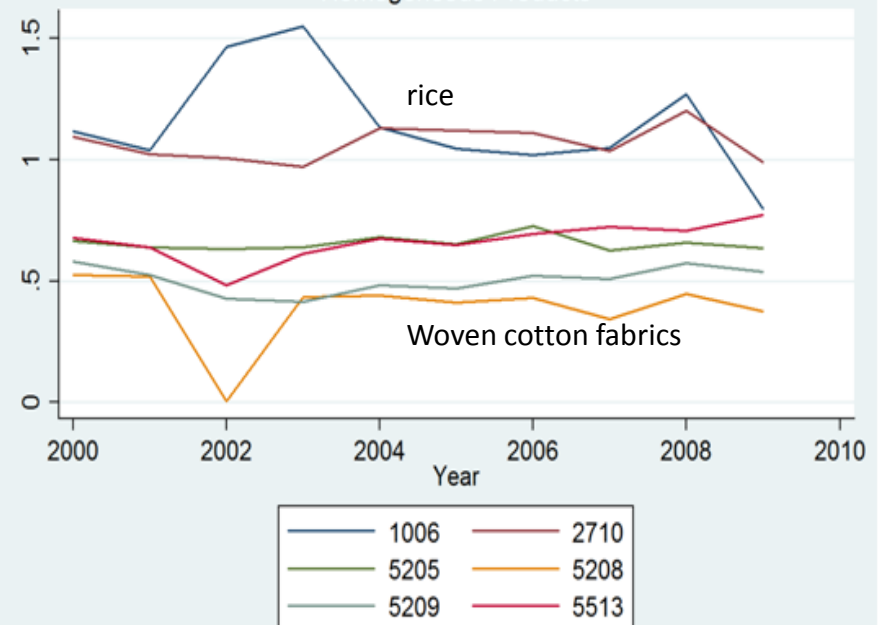


Unit value low and declining in relative terms

PAK Mean UV relative to World mean UV
Differentiated Products

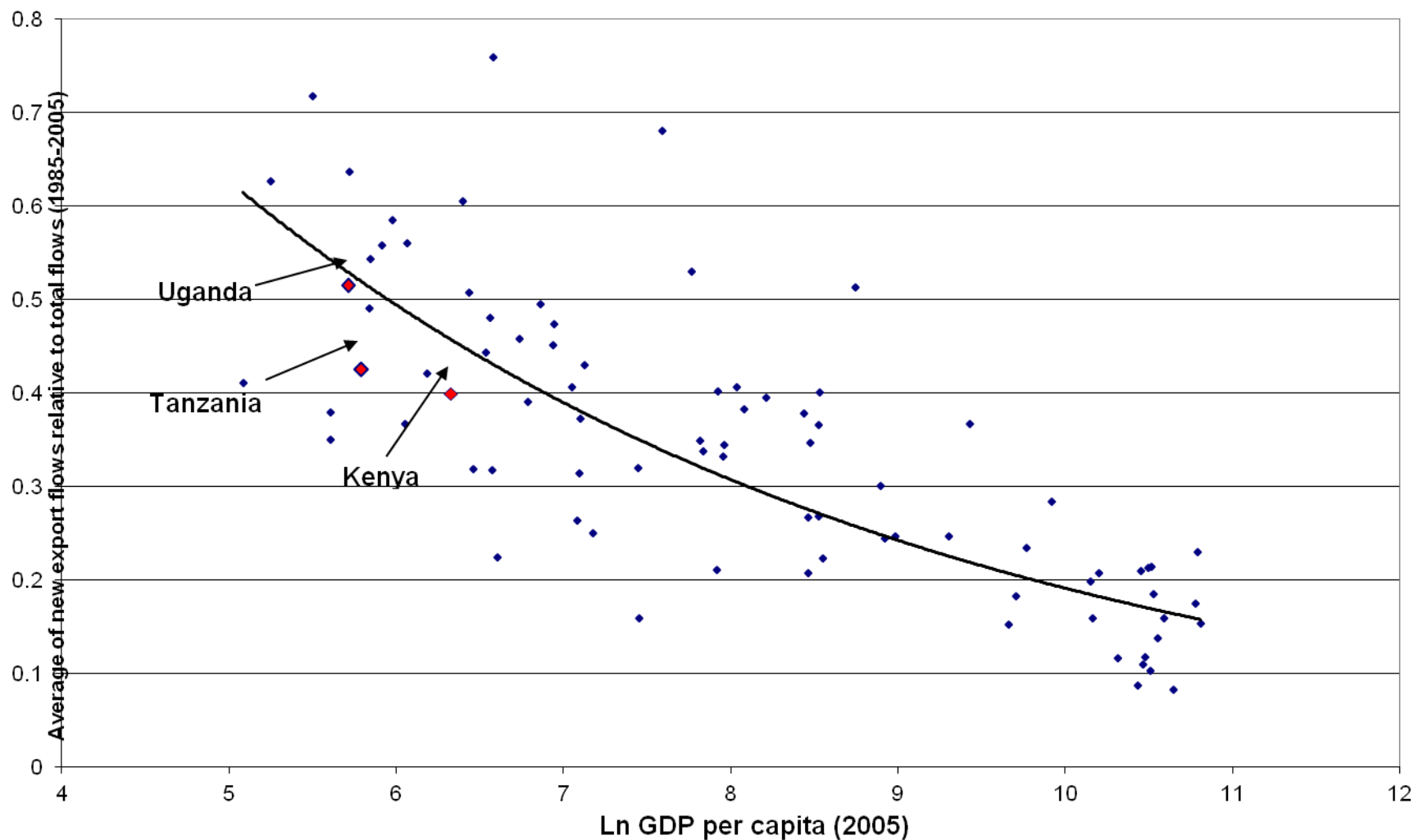


PAK Mean UV relative to World mean UV
Homogeneous Products

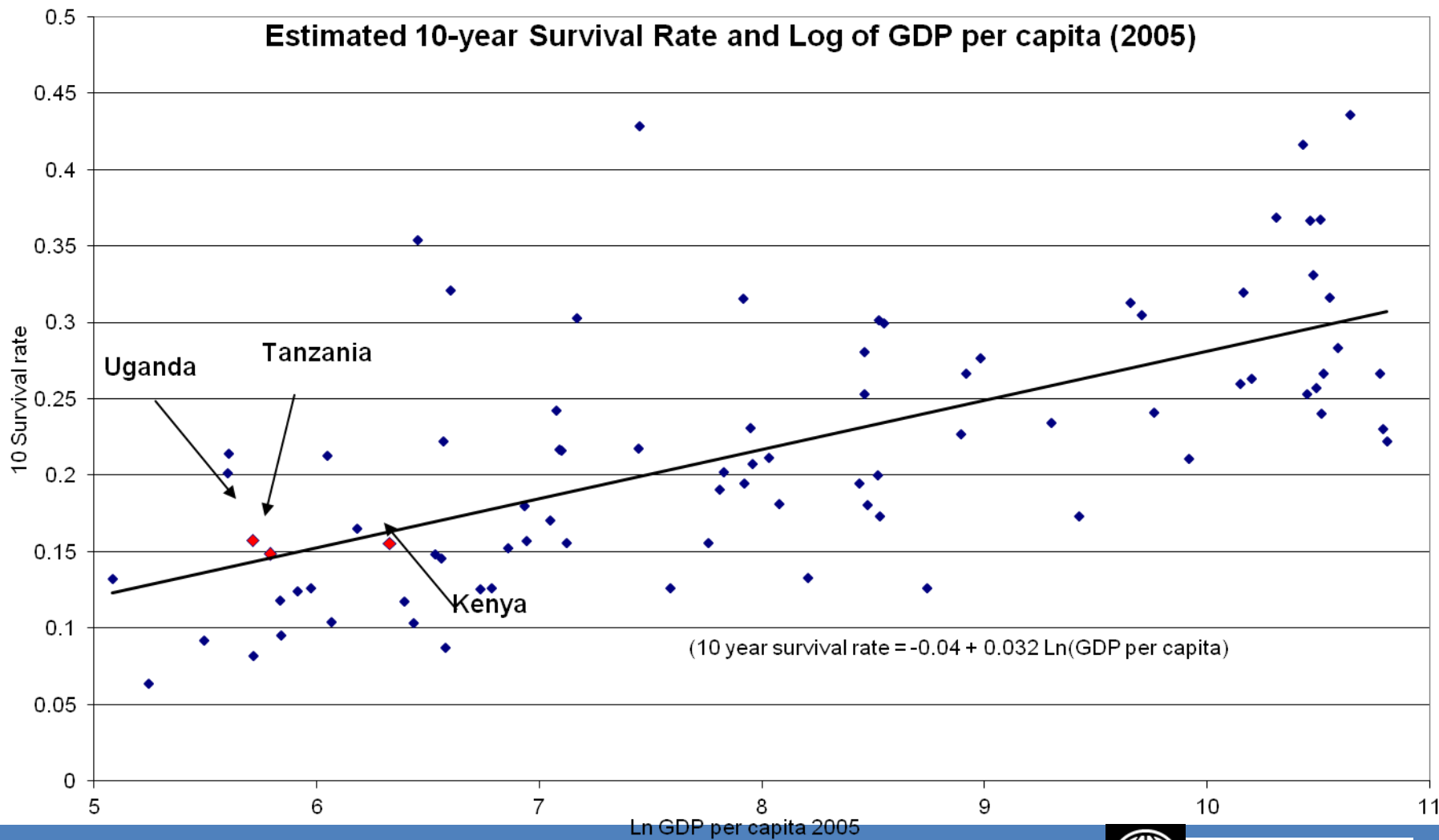


Low income countries perform well in introducing new export flows.....

Figure 3: Average Export Birth Rate and Log of GDP per Capita (2005)



... but have much lower survival rates



So survival matters as much as entry

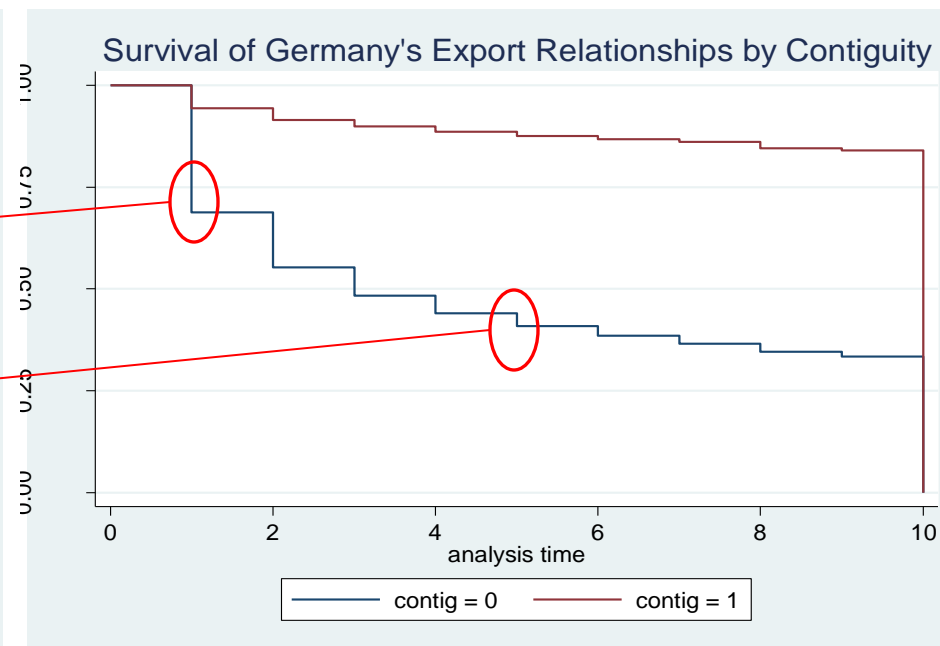
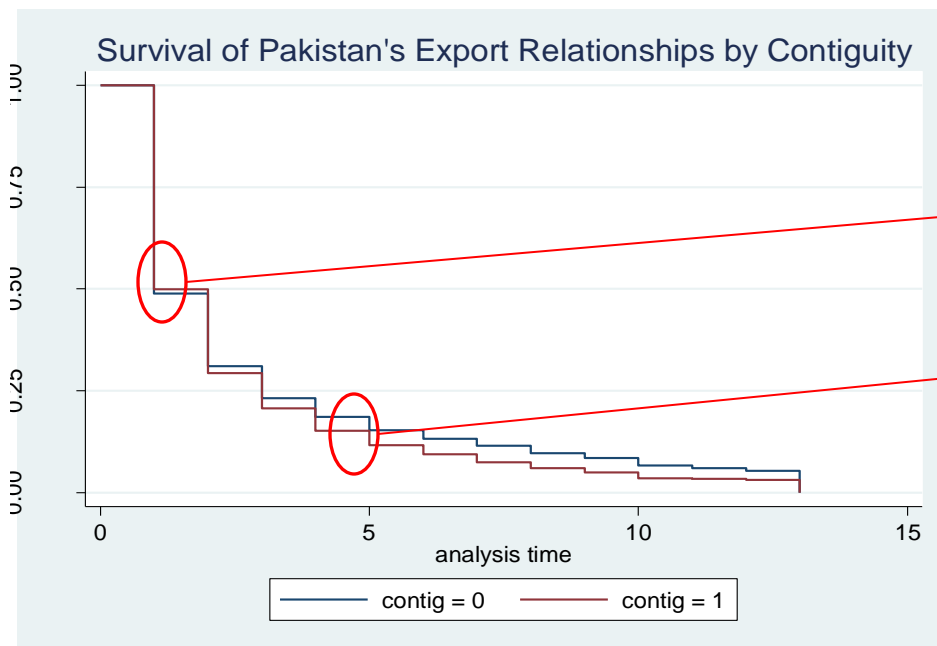
- *“the key element to achieving higher aggregate export growth are longer relationships and hence higher relationship survival rates”* (Besedes and Prusa (2006))
- Hence, successful export diversification requires not only entry into new export markets but also survival and growth
- What are the factors that undermine the ability of exporters to survive and then thrive – how to support the acceleration phase?
 - Links to comparative advantage
 - Endogenous constraints

Critical issue – and major challenge – of getting firm-level data to analyze



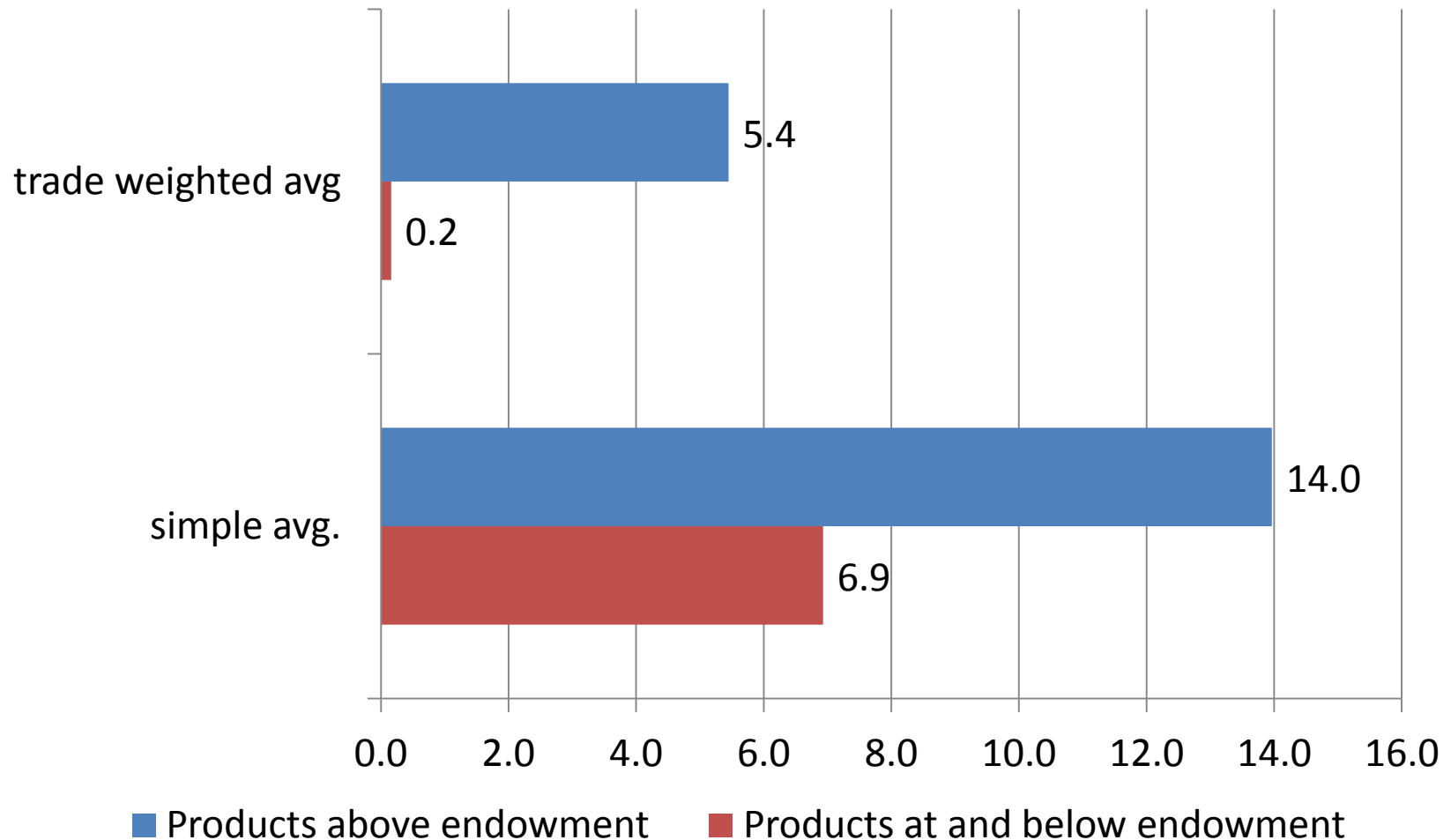
The probability of export flows surviving 5 years is almost twice as high in Germany as in Pakistan

- Survival analysis involves “counting” export relationships (at least at SITC-4 digit) over various periods- many factors need to be considered
 - Minimum values
 - Minimum relationship period (e.g. two or three years)
 - Starting and ending cut-offs
- Survival analysis can also test for various factors – for example here we look at the probability of survival of trade with contiguous countries. In Germany it dramatically improves survival likelihood... in Pakistan it reduces it!



Export death rates rise significantly as Pakistan's exporters move further from their comparative advantage

Average 5-year survival rate of export episodes



Bringing the analysis together

- The approach here uses a wide range of econometric tools to understand trade performance in comprehensive way
- Importance of trying to assess current competitiveness as well as likely longer-term trends, thus the focus on issues like growth orientation, diversification, and quality
- Each section of the outcomes analysis should generate a series of conclusions, questions, and hypotheses about export performance that should come together to give a comprehensive picture
 - But maybe not always a consistent one



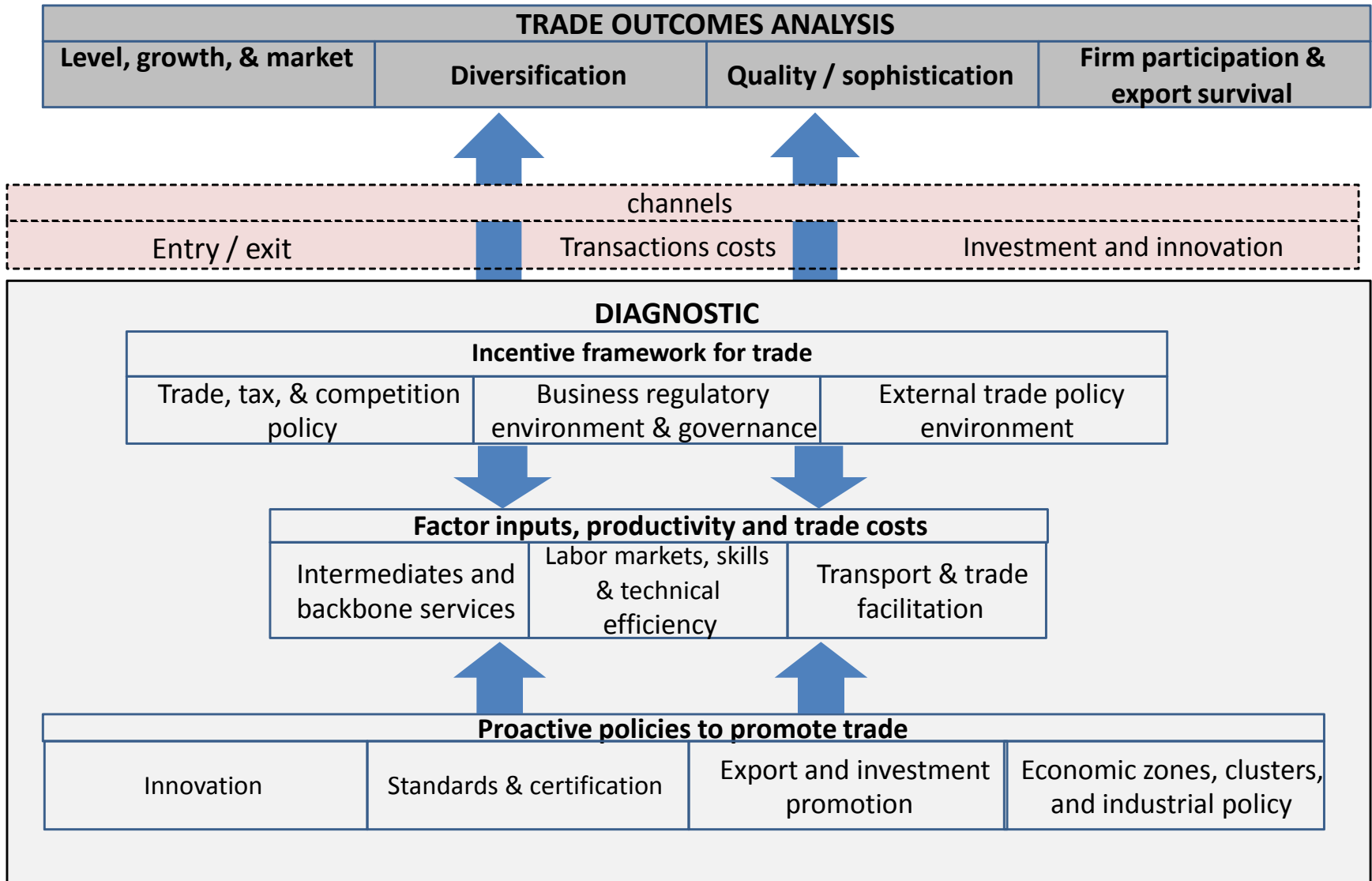
The analysis can raise questions for targeted Diagnostics

Example from Pakistan

1. What is preventing the extension of existing export products to new markets?
2. What will it take to shift the export basket to more dynamic markets in Asia, Latin America, etc? – products and competitiveness, market access issues, etc.
3. Why are average trade relationships of such low value? What are the constraints to deepening trade relationships?
4. What explains the low rates of export survival outside traditional products and traditional markets?
5. What is preventing Pakistan from expanding exports in more sophisticated export products
6. What is holding back quality upgrading in traditional sectors?



The framework



Linking Trade outcomes and supply side factors

- Cross country regressions
- Country specific econometric analyses
- Benchmarking
- Interviews, Business surveys
- Qualitative analysis



Example: Drivers of Diversification

	ln (Theil)			ln (Theil_within)			ln (Theil_between)			ln (Nber)		
	Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.		Coef.	Std. Err.	
ln (per capita GDP)	-0.505	0.09	***	-0.193	0.13	*	-1.054	0.32	***	1.055	0.38	***
ln (per capita GDP) - squared	0.040	0.01	***	0.009	0.01		0.054	0.02	**	-0.106	0.02	***
ln (Infrastructure)	-0.072	0.03	***	-0.122	0.04	***	-0.303	0.08	***	0.119	0.07	*
ln (Remoteness)	1.092	0.46	**	-0.439	0.50		3.753	2.14	*	-3.533	1.51	**
Trade liberalization	-0.009	0.01		0.017	0.02		0.031	0.05		0.108	0.06	*
Pref. Market Access	-0.179	0.04	***	-0.244	0.05	***	-1.031	0.21	***	0.316	0.11	***
FDI (% GDP)	0.001	0.00	**	0.001	0.00	*	0.002	0.00		0.000	0.00	
ln (Years of Schooling)	-0.114	0.06	*	0.017	0.07		-0.625	0.26	**	0.619	0.21	***
ICRG	-0.047	0.04	*	0.086	0.04	**	-0.584	0.14	***	0.416	0.12	***
Policy Score	-0.002	0.00	*	0.002	0.00		-0.003	0.00		0.019	0.00	***
ln (population)	-0.187	0.07	***	0.041	0.08		-0.642	0.27	**	1.582	0.27	***
Country fixed effects	yes			yes			yes			yes		
Year fixed effects	yes			yes			yes			yes		
Observations	1195			1257			1257			1257		
Ajusted R-squared	0.97			0.92			0.98			0.95		

Source: Carrère, Strauss-Khan and Cadot (2011)



Country specific econometrics

Export Growth and Dynamics Project (DECTI): objective is to assemble a database on export flows at the firm level, covering as many countries and years as are available.

To date, the information has been gathered from 22 countries, and data from an additional 10-15 countries is under negotiation.

The database will reveal novel facts about export growth and dynamics from a cross-country and exporter-level perspective.

The ultimate goal is to help monitor the evolution of exports and improve the understanding of exporters' behavior.

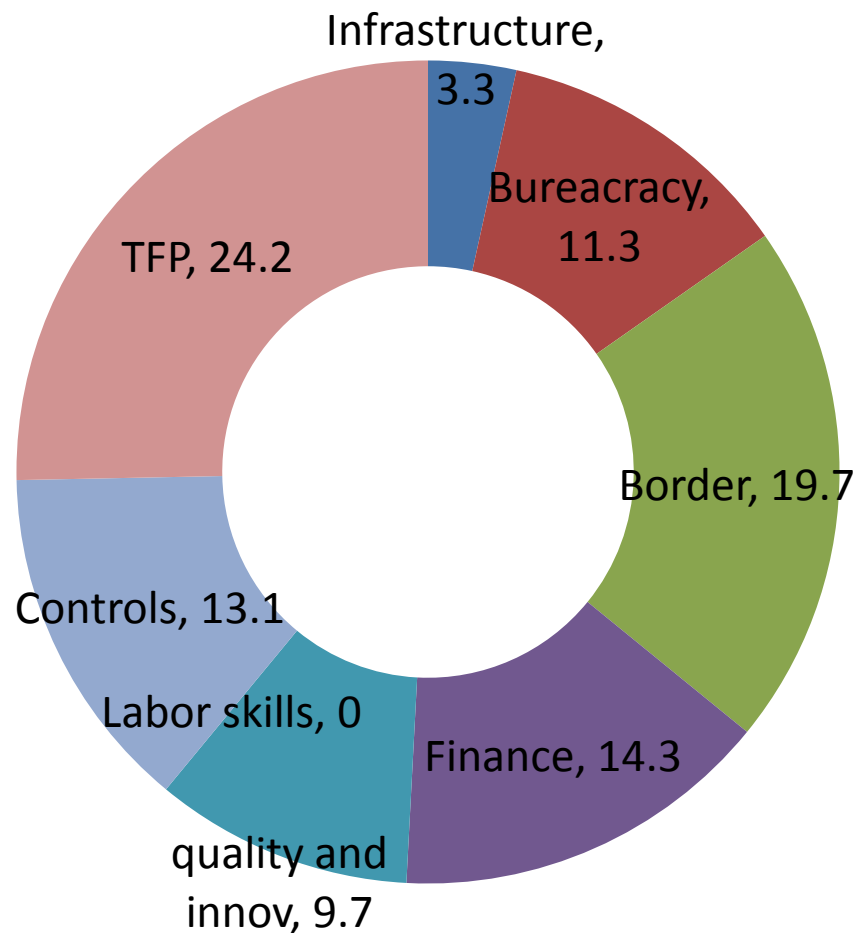
As a result, the data will contribute to the setting of better informed and more specific goals on export growth.

In countries where we get panel data, we will be able to test determinants of Intensive margin, diversification and survival at the country level.



WB Enterprise Surveys are also a source of data

Investment climate effects on the propensity of firms exporting in Pakistan



Conducting the Diagnostics

- Starting point is some desk-based comparative (benchmarking) work drawing on established sources: e.g. Global Competitiveness Index, Doing Business, LPI, Enterprise Surveys, etc.
- This is again part of the process of generating hypotheses and raising questions; also helps to focus the mission on issues that appear to be most important
- Most important step is the fieldwork.

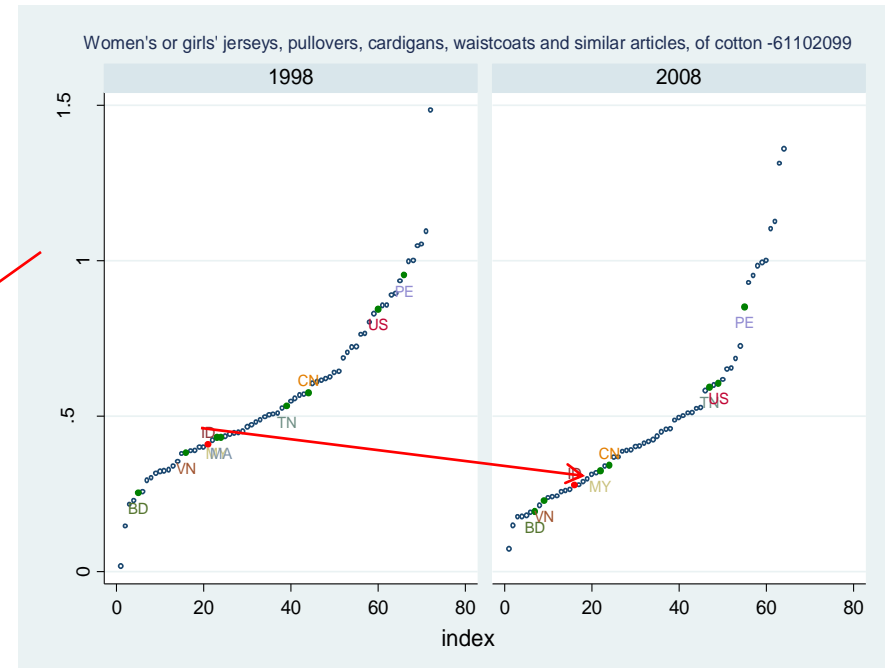
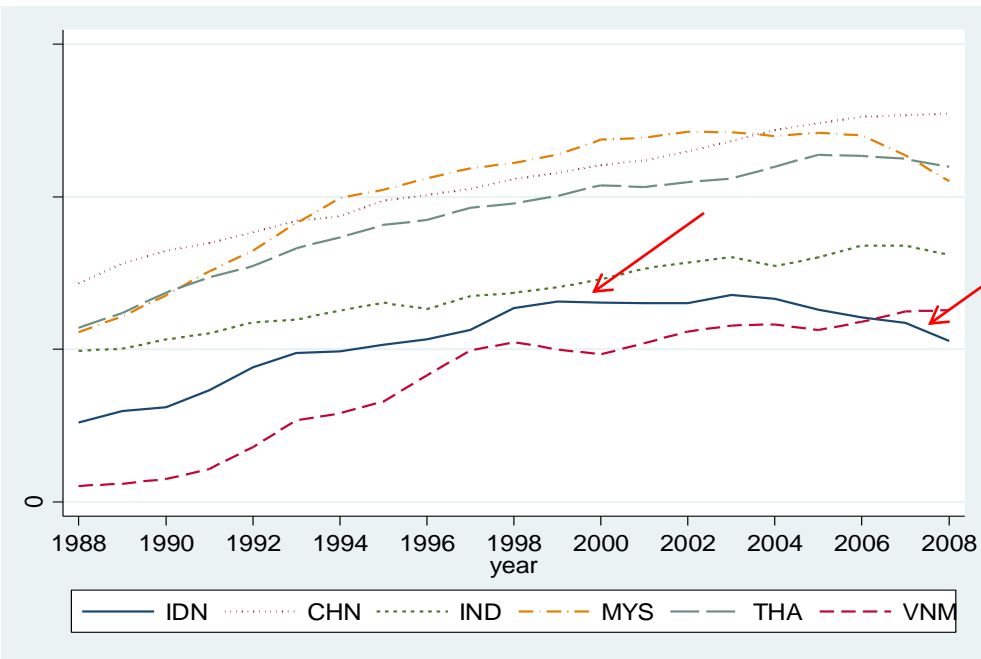


Example: how labor regulations impact manufacturing competitiveness in Indonesia

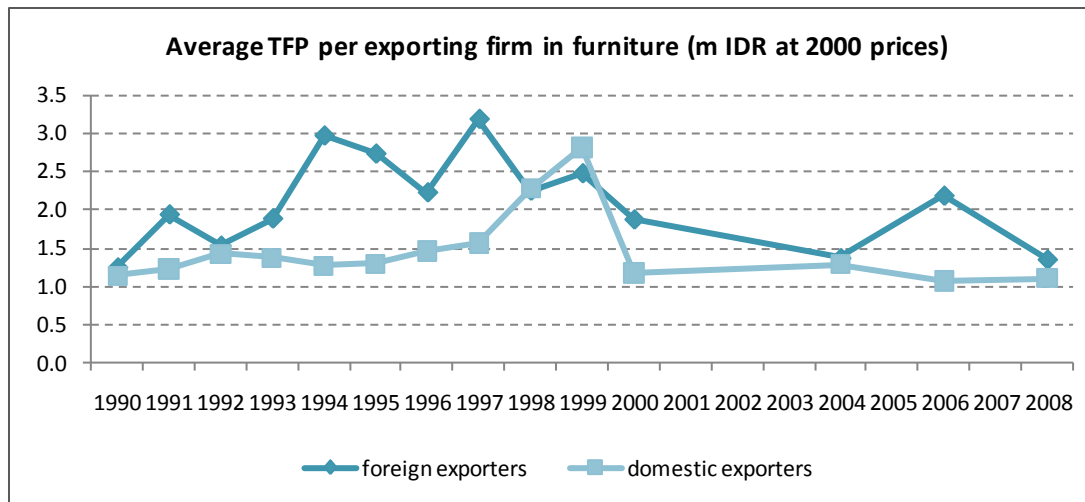
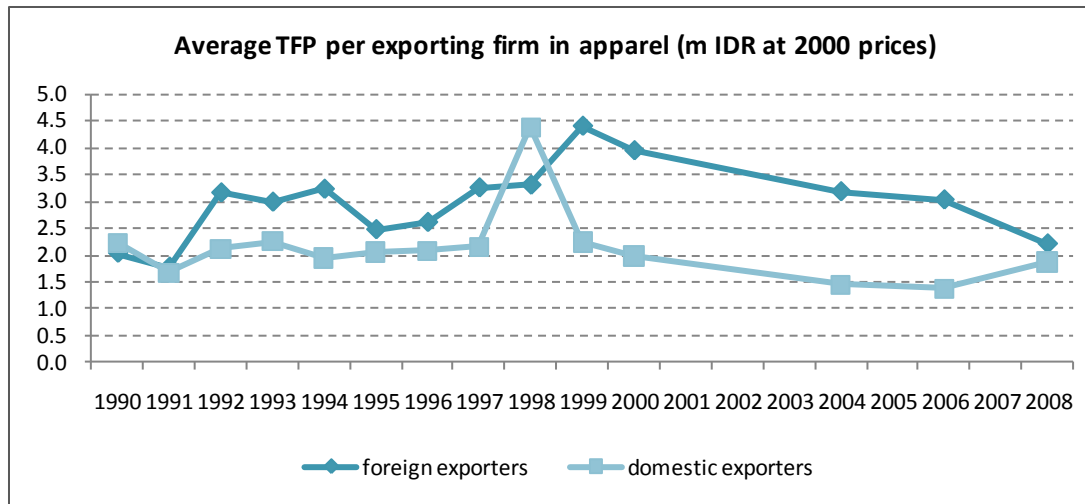


We observe declining relative quality / sophistication of Indonesia's manufacturing exports....

- Evidence that Indonesia getting caught in the middle between low cost producers and more innovative, high quality producers



... and stagnating or declining productivity



Interviews with the private sector identify labor regulations as a “binding constraint”

- Labor regulations put in place following the Asian crisis make it costly to fire workers – workers earn full severance rights after only 9 months. Workers fired for any reason must then be paid at least 18 months wages .
 - This law virtually doubled the cost of firing workers (cost equivalent to about 1/3 of a worker’s wage per year)
 - Also raises the risk from a financing perspective – firm’s hold large liabilities (contingencies) on their books
- How do firms respond? – by hiring labor on a contract basis
 - In labor intensive sectors, virtually no new workers are brought in on permanent contracts. Up to 40% of workers in these sectors are temporary
- What are the implications of this:
 1. Higher cost of financing restricts investment in capital equipment – so lack of modernization (which in turn impacts productivity and quality)
 2. Lack of incentive to invest in training of temporary workers...



Indeed, this is reflected in dramatically less investment in training and skills development of workers

- This has a direct contribution to lower productivity and inability to upgrade effectively



Source: World Bank Enterprise Surveys



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Conducting the Diagnostics – lessons learned so far

- We are piloting this framework in several countries: Pakistan, Senegal, Indonesia, FYR Macedonia, Botswana, Qatar.
- Identification of “the problem” is clearer when diversification is the problem. But the trade outcomes analysis is essential to narrow down the list of potential problems.
- As expected, binding constraints approach works well at broader levels – the 3 main areas we are working with – Incentives, factor and trade related costs and market failures/proactive policies. It is much more difficult to get to more detailed levels, using primarily benchmarking and stakeholder consultation process. However, we have been able to identify specific constraints as in the examples presented. Having clear, pre-identified questions is decisive.



Conducting the Diagnostics – lessons learned so far

- Availability of firm level data is a major improvement in terms of analytical capacity. We are hopeful that the database currently being assembled will play a major role here in understanding exports dynamics and exporter's behavior.
- We are starting to pilot the work at sector level. Sector specific analysis may give us better understanding of the constraints (not necessarily sector specific).
- Combining diagnostics tools is essential though. Fieldwork, through more structured interviews, provide in-depth knowledge of the specific conditions faced by exporters.



THANK YOU

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